## Obesity in America: Environment Matters, Design Matters

J. Michael McGinnis, MD, MPP
The Robert Wood Johnson Foundation

#### 3 Points

Active living shapes health prospects

Design of the built environment is key to active living

 Active Living by Design is an important RWJF priority

## Active Living and Health

### **Inactive Living and Health**

- Heart disease
- Stroke
- Diabetes
- Overweight and obesity
- Osteoarthritis
- Falls among elderly
- Depression, anxiousness
- Certain cancers

## **Inactive Living and Health**

#### **Actual Causes Of Death, 1990**

Tobacco	400,000
Diet/activity patterns	300,000
Alcohol	100,000
Microbial agents	90,000
Toxic agents	60,000
Firearms	35,000
Sexual behavior	30,000
Motor vehicles	25,000
Illicit Drug use	20,000

## **Inactive Living and Health**

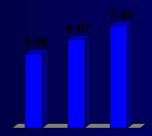
Cause	1990	2000
Diet/activity patterns	450,000	500,000
Tobacco	375,000	375,000
Alcohol	90,000	80,000
Microbial agents	90,000	80,000
Medical errors		70,000
Toxic agents	60,000	60,000
Firearms	35,000	30,000
Motor vehicles	25,000	25,000
Sexual behavior	30,000	20,000
Illicit use of drugs	20,000	15,000

### **Emergence of an Inactive Society**

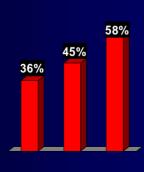
Millions of Person-Miles in Automobiles, 1970-1990

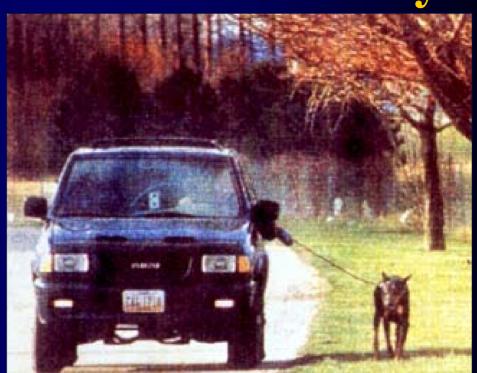


Hours of TV Viewed Daily 1960-1992



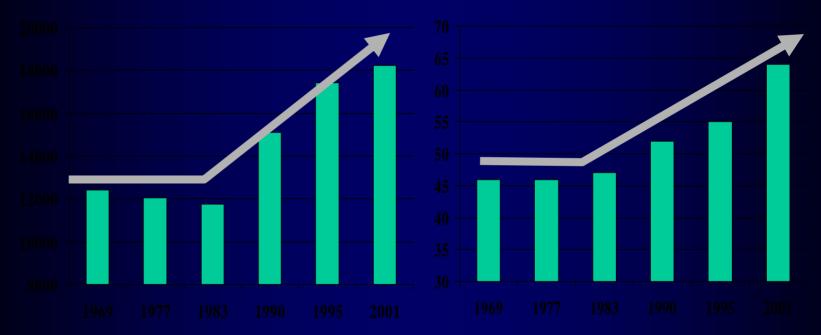
Percent of Workforce in Sedentary Occupations 1950-1996





- Cars used for 80% of trips <1 mile
- Only 10% of children walk to school (v. 80% for their parents)
- Suburbs that are pedestrian-unfriendly
- Television and computers
- More sedentary jobs and recreation

# **Growth in VMT / Growth in Overweight**1969-2001



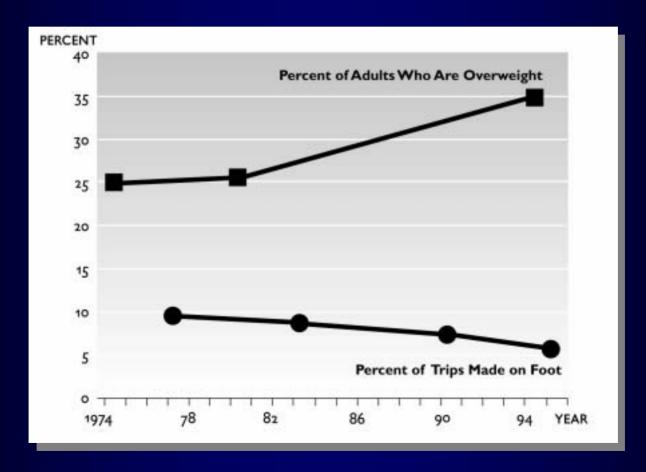
Growth trend for annual household vehicle miles of travel

(50% overall growth)

Growth trend for percent of Americans 'overweight'

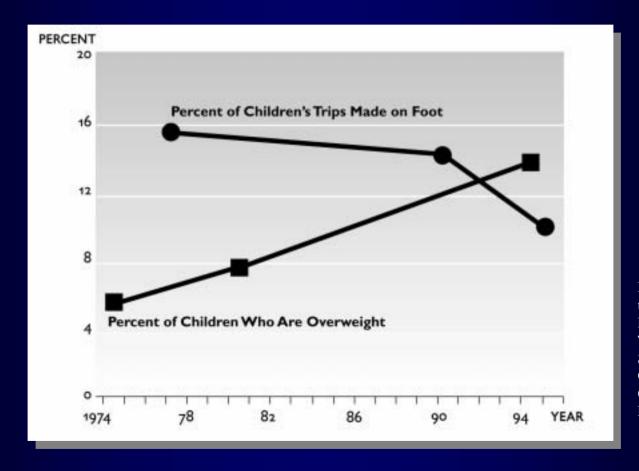
(40% overall growth)

# Walking Falls and Weight Climbs 1974-1996



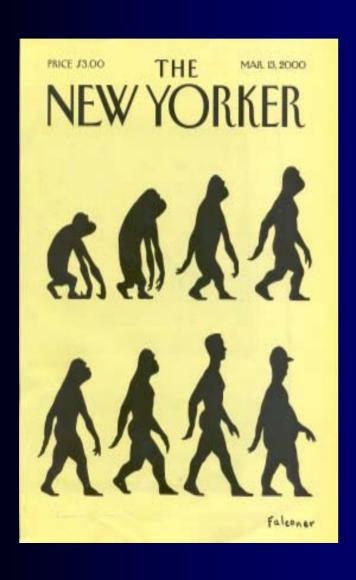
Based on data from the Nationwide Personal Transportation Survey and the Centers for Disease Control and Prevention.

#### Children Ride, Their Weight Rises 1974-1996



Based on data from the Nationwide Personal Transportation Survey and the Centers for Disease Control and Prevention.

## **Explaining the Epidemic**

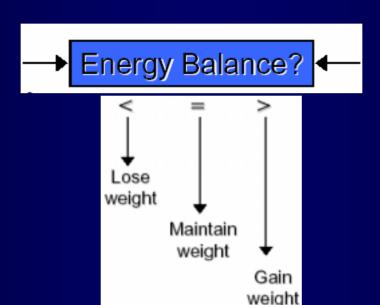


- Not genetic or biological changes
- But sweeping societal and environmental changes we live in environments that are simply calorie promoting and activity discouraging

### **Environment and Energy Balance...**

#### **Food Environment**

- Availability
- Pricing
- Marketing
- Portion sizes



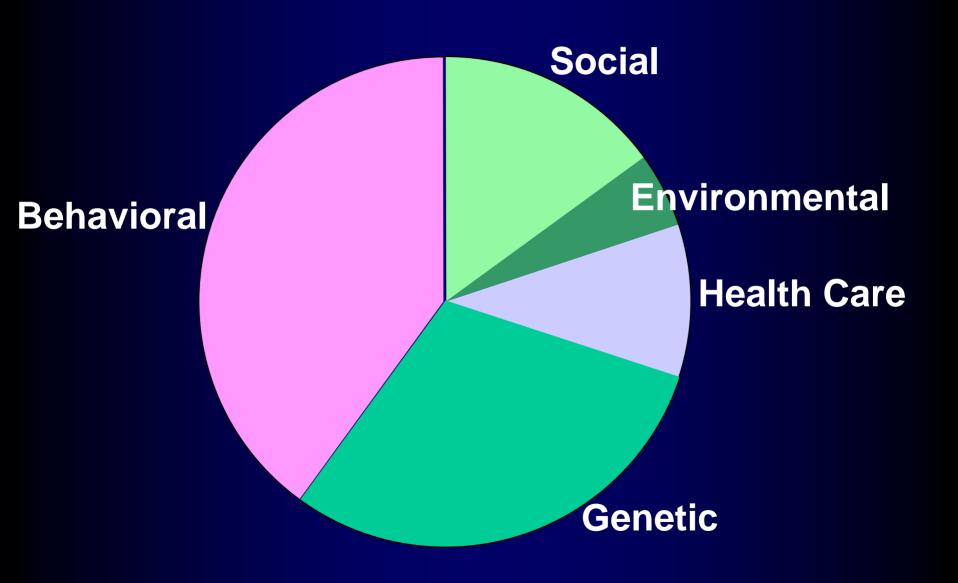
#### **Built Environment**

- Sidewalks
- Bike paths
- Stairwells
- Neighborhood layout

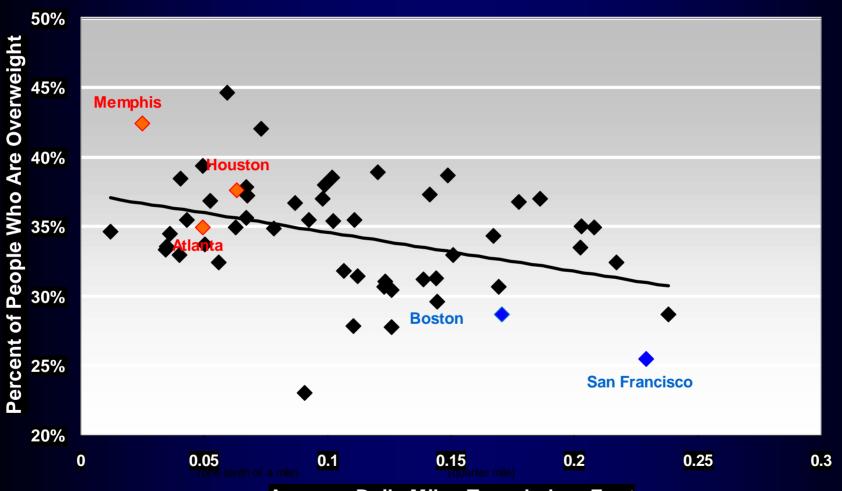
**Facilities** 

## Design and Active Living

#### **Determinants of Health**

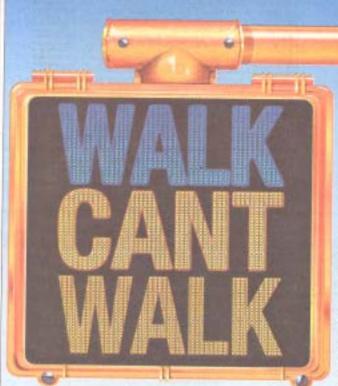


### Weight and Urban Travel Patterns



Average Daily Miles Traveled on Foot

THE NATION'S NEWSPAPER NO. 1 IN THE USA



The way cities and suburbs are developed could be bad for your health

#### By Martha T. Moore USA TODAY

Why don't Americans walk anywhere?

Old answer: They're lazy. New answer: They can't.

There is no sidewalk outside the front door, school is 5 miles away, and there's a six-lane highway between home and the supermarket.

Many experts on public health say the way neighborhoods are built is to blame for Americans' physical inactivity - and the resulting epidemic

of obesity.

The health concern is a new slant on the issue of suburban sprawl, which metro regions have been struggling with for a decade. These health experts bring the deep-pocketed force of private foundations and public agencies into discussions about what neighborhoods should look like.

Cover

The argument over whether suburbs are bad for your health will hit many Americans

precisely where they live: in a house with a big lawn on a cul-de-sac.

The potential for actually tackling story some of these things, with the savvy of the folks who have tackled tobacco, is

enormous," says Ellen Vanderslice, head of America Walks, a pedestrian advocacy group based in Portland, Ore.

A study by the federal Centers for Disease Control and Prevention is tracking 8,000 residents of Atlanta to determine whether the neighborhood they live in influences their level of physical exercise. The Robert Wood Johnson Foundation in New Jersey.

## The Washington Post

FRIDAY, AUGUST 29, 200

THE WASHINGTON POST

NATIONAL NEWS

FRIDAY, AUDUST 20.

#### Suburbia USA: Fat of the Land?

#### Report Links Sprawl, Weight Gain

By Hon Street Washington that Stuff Frew

Suburban sprawl appears to be contributing to the nation's obesity epidemic, making people less likely to walk and more likely to be overweight, researchers reported yes-

In the first comprehensive coamination of whether saburbs spreading across the U.S. landscape are alfeeting Americans' health, the researchers studied more than 200,000 people in 448 counties, producing the flist concrete evidence supporting suspicions that spowd is aggravating the nation's growing weight crisis.

People who live in the most spread-out areas spend fewer minutes each month walking and weigh about six pounds more on average than those who live in the most densely populated places. Probably as a small, they are almost as propeto high blood pressure as rigarette smokers, the researchers found.

"There are lots of other reasons why we should work to contain sprawl," said field living of the University of Maryland's National Center for Screet County who led the

dence and no national data. The new findings are likely to be used by advocates of tightly controlled growth around the country, includ-

There is a lot of circumstantial evidence that enrawl is related to health," Essing said in a telephone interview. "This is certainly the first national study to make the direct connection between the built envicontraent and health."

Ewing and his colleagues analyzed data collected about 206,960 U.S. adults between 1998 and 2000 by the Behavioral Risk Factor Surwellbaser System, an ongoing lederal survey. Using data from the Conses Bureau and other federal sources about population density, block size, street patterns and other factors, the researchers calculated a "sprawl index" for 448 counties in the largest metropolitan areas nationwide, where two-thirds of the population reside, including the Washington region.

The index ranged from a law of 63 for the most sprawling county-Genusa. Ohio, tast outside Cleveland-to a high of 352 for the densest-New York City.

Frederick County in Maryland,



People who live in the most spread-out areas were found to weigh about six pounds more on average than those in the most dernely papelated at

25 demest counties.

People in more sprawling counties are also likely to have a higher body mass index (BMI), a standard mensure of weight. A 50-point increase in the degree of aprawl was associated with an average weight gain of a little more than one pound per across, researchers found.

While rewarchers found no assogiation between sprawl and diabetes at beart disease, thry did find that people who live in the least surryling seess had a 29 percent lower risk of developing high blood pressure then those in the most Sprawl and Obesity

New research links suburban sprawl to obesity. You are more likely to be overweig) live in an area with low population density and a more expansive street grid.

	The longer the agrand lader store, the greater the amount of sprawl.	More opcost means, you are more likely to have a higher leady more index	pounds you are likely to weigh,	the higher year risk of high blood pressure	high risk s being
5000,000 PT	SPECIAL MORE	5042330 9M*	OPERE.	PERCENT LEPHANDO PROM	9070
Maryland	200	260	4000	ARCHARC ROK	- 44
Anne Arundol	107.75	26,07	165.47	-0.92%	5.34
Celvert	90.84	26.13	166.84	1.10	5.04
Phodog	89.77	26.14	166.87	2.00	2

tional Center for Smart Growth at the University of Maryland.

The study also looked at heart disease and diabetes, but didn't find any statistically relewant relationship between sprint and these diseases.

The stocky did find that the

Pickens County, S.C. 183.8:

Gozuge County, Ohio (63.1)



Source: Smith Growth America Sorbox Reseportation Policy Rogics

discourage walking). Statistics on weight, obesity, hopertension and other health factors were gleaned from a continuing phone survey of more than 201,006 adults by the CDC.

The study found that for evory Microsoft increase in surand

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## Mounting Evidence that the Built Environment Impacts Activity Levels

#### **Design Variable**

Mixed land use

**Proximity of services** 

Perceived traffic safety

Perceived aesthetics

**Development of bikeway** 

#### **Activity Outcome**

19% ↑ in walk/bike trips

27% ↑ in walk/bike trips

88% ↑ in walk/bike trips

50% ↑ in walk/bike trips

57% ↑ in bicycling

### Neighborhoods Design and Walking

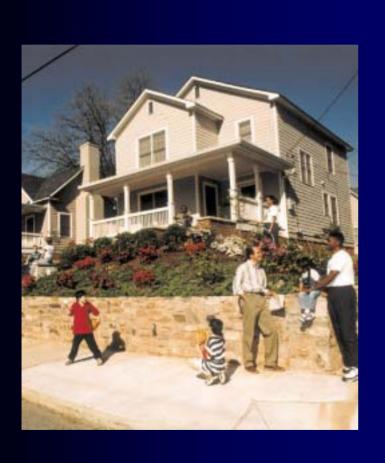




Traditional urban settings can generate half the automobile trips of similarly sized modern day suburbs.

Sources: Ewing and Cervero, 2001; Frank et al., 2001; Cervero and Radisch, 1996; Handy1996; Rutherford, 1996; Criterion Planners Engineers, 2000

### Sidewalks and Quality of Life



"Lowly, unpurposeful and mundane as they appear, sidewalk contacts are the small change from which a city's wealth of public life may grow."

Jane Jacobs, The Death & Life of Great

## One Study: 50 million viewers

#### Academic paper

THE SCIENCE OF HEALTH PROMOTION

Building the Editions-U.S. Approaches

#### Relationship Between Urban Sprawl and Physical Activity, Obesity, and Morbidity

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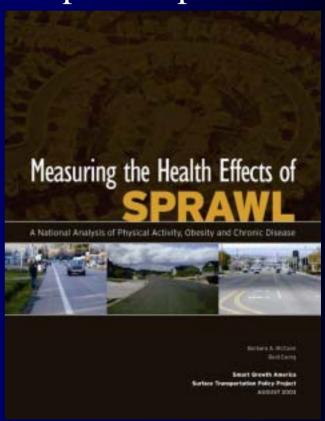
#### **EXTREMEDITION**

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#### Popular report



#### Physical activities in or near buildings

- Walking
- Biking
- Stair climbing
- Running
- Use of indoor exercise facilities on/off site
- Use of outdoor facilities on/off site
- Occupational/ household activities









# Activity-Friendly Buildings: Which aspects of design matter?

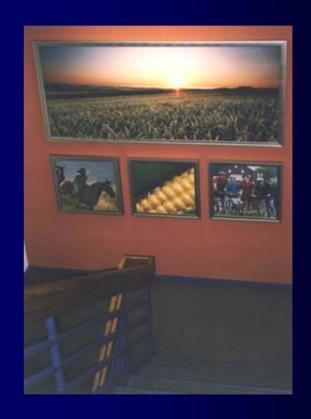
 Destination points (food service, copy and conference rooms)

Building layout and way finding

• Fitness centers and corporate culture

# Designing Activity-Friendly Buildings Adding Steps for Better Health



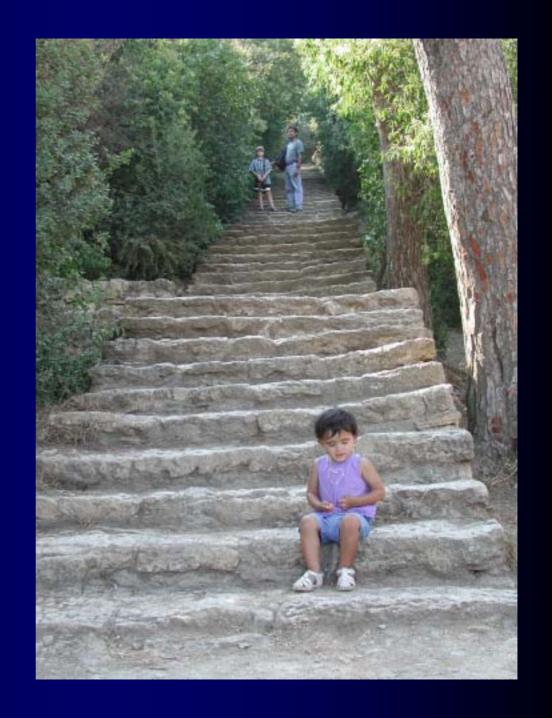


Source: Kerr, Nicole Angelique MPH, Centers for Disease Control Stairwell Project slide set

Source: Jim Sallis Ph.D., San Diego State University

# Great stairways

Park Guell, Barcelona

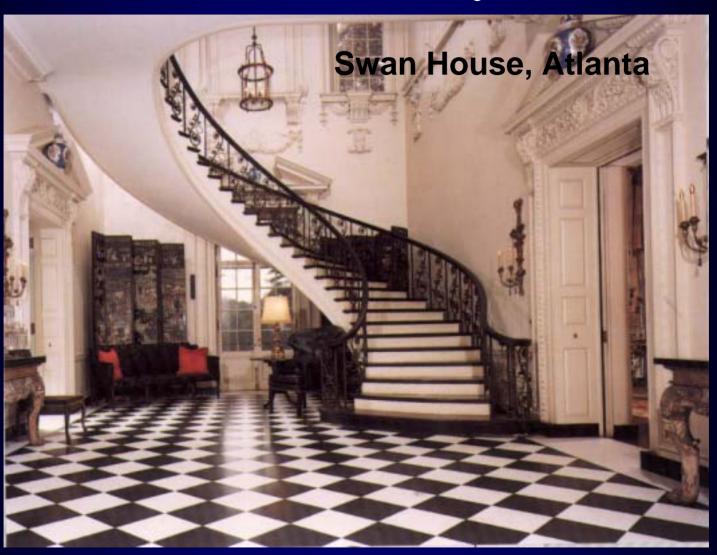


# Great stairways

The Louvre



## Great stairways



## "Living Buildings"



- Site selection
- Site layout
- Design features
- Foot pattern flow
- Stair incentives
- Communication

Adidas Village, Portland, Oregon



## HEALTHY ARCHITECTURE

# The DNA of the built environment --effects of codes and zoning

TRANSPORTATION SUMMIT, PAGE 20 / MARKETS FOR SMART GROWTH, PAGE 10

## New Urban News

OVERING DESIGN & DEVELOPMENT OF HUMAN-SCALE NEIGHBORHOODS

VOLUMER + NUMBER 1

JANUARY/FEBRUARY 2003

#### Zoning reform advances against sprawl and inertia

Congress for the New Urbanism (CNU), Local Government Commission, and others are pushing form-based, mixed-use codes.

PHILIP LANGERS

An overhand of soning codes is shaping up as one of this year's chief new Aurhanist goals.

Both CNU and the Sacramento-hased Local Government Commission are compiling surveys of anti-sprancl auring codes that have been enacted by cities and counties throughout the US. At the same time, the Municipal Code Corporation (Municodel in Tallahasee is beginning to distribute the SmartCode developed by Duany Plater-Zyberk & Co. The big question is how many of America's thousands of local communities will go to the trouble of changing or discarding their existing auring, which has the implicit backing of conventional real estate interests.

Alluquengue architect Bill Dennis says that at last June's CNU conference in Miami Beach "everyone felt the pressing issue was codes." With that in mind, Dennis organized the October Santa Fe Council session oit codes, preparing the groundwork for intensive zoning reform work this year.

Conventional coming is anothernationew urbanists and proponents of unart growth because it inflicts harm in seven ways, according to one of the Santa Fe Council's speakers, Paul Crawford of Crawford Multari & Clark Associates in San Luis Obispo, California. He identifies the detrimental assults as:

CONTINUED ON PARK

#### Growing focus on health should aid New Urbanism

Robert Wood Johnson Foundation is supporting a program to 'change the mindset of the whole country.'

The Robert Wood Johnson Foundation's campaign to reform Americans' unhealthy way of life is growing into an impressively wellfinanced effort — one that should help New Urbanism in at least two important ways.

The Princetor-bused foundation in the pirst couple of years has made incroused physical activity a key good, supporting the encloavor with grants that may eventually total \$70 million or more. That's roughly three times as much money as the foundation was known to be allocating to active living and community design programs

CONTINUED ON PAGE 8

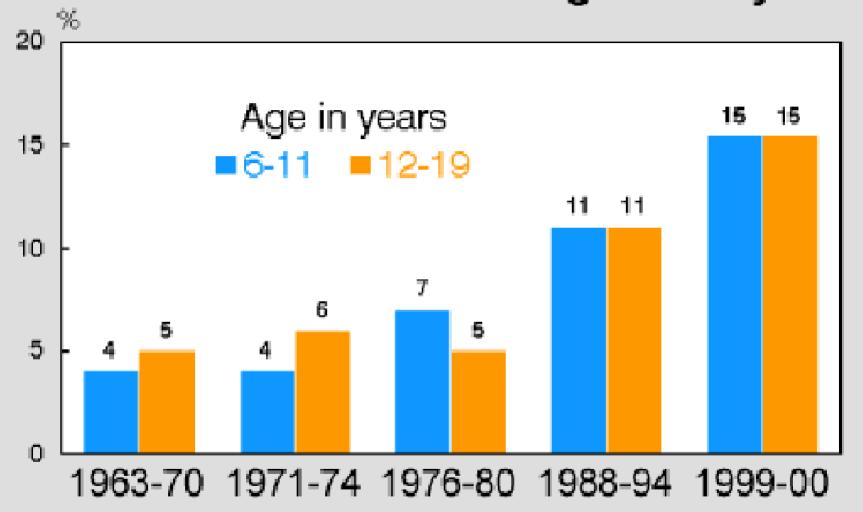
## **RWJFActive Living Programs**

### **RWJF Grantmaking Goals**

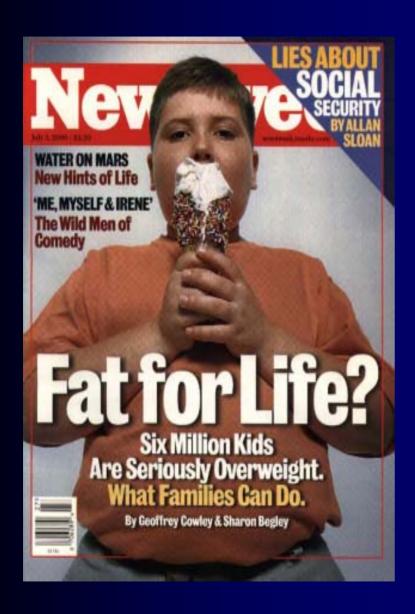
- To assure access to basic health care
- To improve care for people with chronic health conditions
- To reduce the harm caused by substance abuse
- To promote healthy lifestyles and communities



## Figure 1. Prevalence of overweight among children and adolescents ages 6-19 years



NOTES: Excludes pregnant women starting with 1971-74. Pregnancy status not available for 1963-65 and 1966-70. Data for 1963-65 are for children 6-11 years of age; data for 1966-70 are for adolescents 12-17 years of age, not 12-19 years.
SOURCE: CDC/NCHS, NHES and NHANES.



We are raising the first generation of youth who may live sicker and die younger than their parents



#### **Active Living**

Active Living is a way of life that integrates physical activity into daily routines with the goal of accumulating at least 30 minutes of activity each day.



#### **RWJF Active Living Programs**

#### Designed to

- Develop the evidence base-environments and policies
- Demonstrate that communities can create supportive environments
- Create market interests and consumer demand



#### **Active Living Programs**



### RESEARCH

Investigating policies and environments to support active communities



### ACTIVE LIVING BY DESIGN

Increasing physical activity through community design



#### ActiveLiving LEADERSHIP

Working with government leaders to create and promote active communities



#### Active Living NETWORK

Building a national coalition for active communities



#### Active Living RESOURCE CENTER

Providing technical assistance to create active communities



#### **Action Strategies**

- Support programming that promotes active living
- Foster collaboration and information sharing
- Support pedestrian-oriented transportation facilities and services
- Support active living land-use planning and development
- Encourage healthy school sites, facilities and policies
- Support recreational facilities, parks and trails
- Identify and create active living funding sources



### Social Change Model for Creating Activity-friendly Communities

Build the Evidence Develop Models
And Increasing
Delivery Capacity

Create Demand





## Social Change Model for Creating Activity-friendly Communities

**Building the Evidence** 

Creating Models
And Increasing
Delivery Capacity

**Creating Demand** 





- Active Living Research
- Community Indicators
- Sprawl and Obesity
- Walk your Kids to School Evaluation
- Commuter Behavior and physical activity

- Active Living by Design
- Active for Life

- Active Living Network
- Active Living Leadership
- Bikable Awards
- Youth Health Fellows
- The Shape We're In
- America's Walking





Stimulating and supporting research that will identify environmental factors and policies that influence physical activity...

- We are helping to develop a new transdisciplinary field of active living researchers
- We offer grants to help build the evidence base
- We have a resource center of literature citations and active living news







#### What's New...

- Register now for applicant teleconferences
- Now open Call for Proposals Round 3
- Funds have been awarded to 7 new grantees



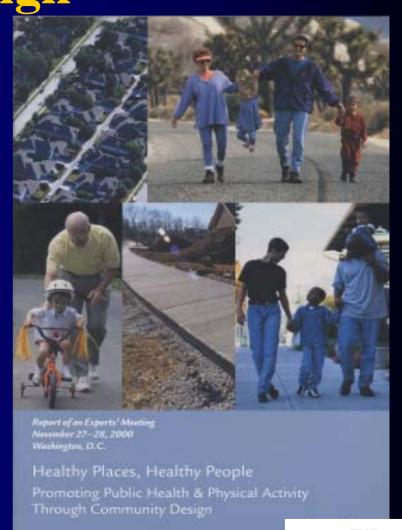
An Active Living Program supported by The Robert Wood Johnson Foundation and administered by San Diego State University.

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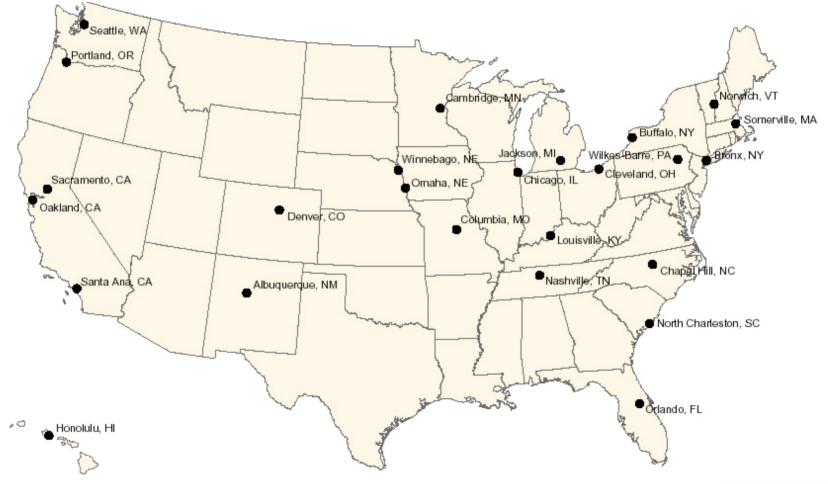


**Active Living by Design** 

- Building partnerships
- Testing community approaches
- Developing learning network



#### Active Living by Design Community Partnerships





## Columbia, MO PedNet Coalition

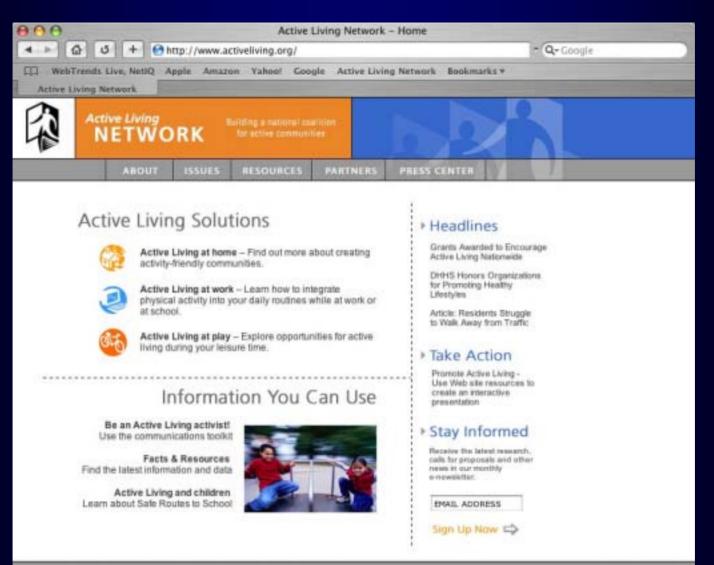
- Youth-led Safe Routes to School
- Youth-led transit ridership initiative
- Promotion of city trail network
- Competitive community events



# Winnebago Reservation, NE Ho-Chunk Community Development Corporation

- Mixed use village with active living features
- Trail master plan with bike/ped roadway improvements
- Walk/bike clubs
- Safety campaign and neighborhood watch
- Gardening programs





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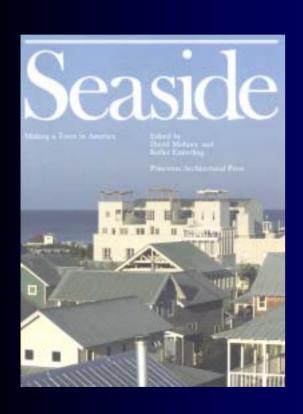




#### **Envisioning Change**



# Architecture and the Nation's Health: Design Matters



- Broader view of contemporary design
- Opportunities in architecture standards
- New roles and partnerships



